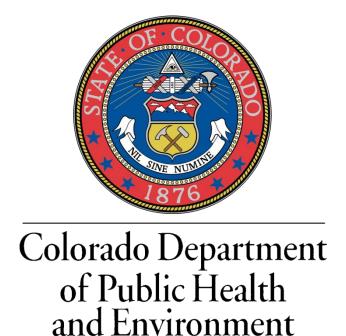
# COLORADO MILK HAULER/SAMPLER MANUAL



**DIVISION OF ENVIRONMENTAL HEALTH & SUSTAINABILITY** 

**MILK PROGRAM** 

DENVER, COLORADO

November 2013

### **INTRODUCTION**

Bulk milk hauler/samplers, hereafter referred to as hauler/samplers, are a vital link in the dairy industry. In performing their duties, the hauler/samplers represent the producers, processors, and the regulatory agencies. The hauler/sampler grades milk by using the senses of sight and smell to determine the acceptability of the milk in each bulk milk tank. The hauler/sampler measures the amount of milk in each bulk tank and samples the milk. These samples are used for payment, quality control and as official regulatory samples.

The hauler/samplers sample collection is a fundamental step in the process of evaluating the producer's milk to determine its compliance with legal bacteriological and chemical standards and for milk fat content (as a basis of payment). The importance of proper procedures used in collecting, handling, and transporting samples from dairy farm to laboratory cannot be over emphasized. It is imperative that each sample be representative of the volume from which it is collected and that it arrives at the laboratory with no change in its bacteriological, chemical, or physical condition. It is mandatory that a strict routine be established and adhered to at every pick up, since the necessary tests may be spread out over a period of time.

Any hauler/sampler that tests, measures, or samples milk or cream is required by law to apply with the Colorado Department of Public Health and Environment for a license. A license fee of fifty dollars (\$50.00) for a year or any part of a year, based on this State's fiscal year (July 1 through June 30 of the following year), is required to accompany the application. To obtain a license, the hauler/sampler is required to pass a written examination, which is based on the material contained in this manual. A sampling evaluation is required to be performed on each licensed hauler/sampler at least once every two (2) years at a dairy farm to determine if the equipment and procedures used by the hauler/sampler to obtain and transport samples are in substantial compliance with the requirements in this manual and the **Colorado Grade A Pasteurized Fluid Milk and Milk Products Regulations.** This evaluation is conducted by a FDA approved State Sample Surveillance Officer or by other certified state and industry evaluators. The certification of a hauler/sampler is subject to review and/or cancellation by the State Sample Surveillance Officer. A license is subject to cancellation at any time the person holding the license is determined to be incompetent or guilty of violating any of this State's laws or regulations.

This manual is based on the requirements for hauler/sampling contained in the <u>Colorado Grade A Pasteurized Fluid Milk and Milk Products Regulations</u> and the <u>Colorado Revised Statues</u>, 25-1.5-104(1)(b)(I) and 25-5.5-107. For your reference, the <u>Bulk Milk Hauler/Sampler Evaluation</u> Report is part of this manual.

# MILK HAULER/SAMPLER PERSONAL REQUIREMENTS

- 1. The hauler/sampler is a human food handler and is expected to practice good hygiene.
- 2. Maintain a neat appearance.
- 3. Wear clean outer garments.
- 4. Have clean hands.
- 5. Shall not use tobacco in the milkhouse. Smoking is considered an impairment to checking the milk supply for off odors.

# HAULER/SAMPLER EQUIPMENT REQUIREMENTS

The hauler/sampler must have the proper equipment and supplies in order to properly sample, measure, transfer and transport milk. The necessary sampling equipment is:

- 1. Adequate supply of sterile single service sampling vials/bags stored in a clean and dry location.
- 2. Indelible or permanent marking pen to identify samples.
- 3. Calibrated pocket thermometer, certified for accuracy a minimum of every six (6) months; accuracy ±2°F (1°C), with proof of calibration.
- 4. Ample supply of ice or other cooling medium to maintain samples at 32°F 40°F (0°C-4-4°C).
- 5. Watch or other timing device to measure bulk tank agitation time.
- 6. Properly constructed, designed, and insulated sample box with a sample rack or floating sample support.
- 7. Spray bottle or similar device containing a sanitizing solution of 200 ppm chlorine or equivalent.
  - a. For sanitizing dipper, thermometer, bulk tank outlet valves and piping/transfer hose.
  - b. This sanitizer solution should be made up each day.
- 8. Sample dipper or other sampling device of proper construction, sanitary design and material; clean and in good repair.
- 9. Sanitizer test strips for checking the strength of the sanitizer being used.

### HAND WASHING

The hauler/sampler is required to use the hand wash facilities, including soap and single service towels.

Equipment wash vats are not to be used for hand washing.

Hands shall be washed and dried:

- 1. At each stop.
- 2. Prior to grading.
- 3. Prior to taking temperature.
- 4. Prior to measuring.
- 5. Prior to sampling the milk.
- 6. Prior to handling any other milk contact surfaces.
- 7. Any time during the pickup and sampling procedure that hands become contaminated.

### **GRADING THE MILK**

Grading the milk in the farm bulk tank is an important step to ensure only clean, uncontaminated, properly cooled milk is transferred and commingled with milk in the bulk tank truck. It is the hauler/samplers responsibility when grading the milk to screen out and reject milk with serious defects.

The grading of milk is done by smell, sight and temperature only. It is important that the hauler/sampler not taste the milk due to the potential health problems caused by consuming raw milk.

### Grading milk for off-odors by smell:

The hauler/sampler is required to grade the milk by smelling for off odors.

The hauler/sampler shall smell the milk through a sample port or when the manhole is first opened to detect odors. This is when odors such as sour, rancid, feedy, barny, musty, and weedy are the strongest.

Odors gather just below the cover of the bulk tank. To properly check for off odors:

- 1. Open the lid of the bulk tank, keeping the opening as small as possible to prevent odors from escaping.
- 2. Put your nose down to the opening and smell the milk.

3. Milk may be checked for odors with or without the agitator running, but this step is to be performed before observing, measuring, or sampling the milk.

Normal milk has virtually no odor. The hauler/sampler should have a firm impression of the smell of normal milk so he can judge the milk he collects with confidence. Milk with serious off odors must be rejected. The producer and assigned fieldperson should be contacted to determine the cause and make corrections. In the case a hauler/sampler is uncertain if the milk is acceptable, the fieldperson may be contacted for guidance.

Milk with slight off-odors should be brought to the attention of the producer and fieldperson with an appropriate comment on the milk ticket. This may serve as an early warning, avoiding serious trouble.

The following is a list of the more common off-odors. Some of the more common off-odors and their possible causes are:

- 1. Feed: The feed the cow eats may impart certain odors to milk. Some stronger feeds will carry through more noticeably than others. Odors resembling green grass, silage, onions, and alfalfa hay are outstanding examples. Feed odors can be minimized or eliminated by taking the cows off offending feeds at least four hours before milking.
- 2. Barny, Cowy, Unclean: This odor is from cows breathing foul air, poor barn ventilation, dirty utensils and equipment, insufficient bedding, or poorly fermented silage. Good sanitation and ventilation, clean utensils, proper milking habits, and better feeding practices will correct this.
- 3. Medicinal, Musty: many times this problem is caused by feeding moldy hay before milking, a poorly ventilated barn, or a residual chemical odor from udder treatments or sanitizers. Correcting the cause will usually correct the problem.
- 4. Rancid: Very often this odor is caused by excessive agitation of warm raw milk, excessive foaming, or alternate warming and cooling. Rancid condition of milk will cause an odor like soap, perspiration, or syrupy butter.
- 5. Sour: Sour milk will have a malty odor and will be found when poor cooling has resulted in excessive bacterial growth. It can also result from an excessive amount of bacteria gaining entrance to the milk through unsanitary milking practices and/or unsanitary milk equipment.

### **Grading milk by appearance:**

The hauler/sampler is required to grade the milk by observing for abnormalities.

The milk is required to be observed in a quiescent (motionless) state with the lid wide open and lights on when necessary.

Normal milk color ranges from bluish white to golden yellow and is free of foreign or clotted matter.

The following are some milk quality problems which may be evident when checking milk appearance:

- 1. Bloody milk is the milk from cows with mastitis or from fresh cows that may contain blood. A small amount of bloody milk can give a large quantity of normal milk a reddish or pinkish tinge.
- 2. Flaky milk is often from cows having mastitis and may show as light flakiness or pronounced stringy curd particles.
- 3. Extraneous matter includes such things as insects, hair, chaff and straw. The presence of extraneous matter may result from careless handling of milk, open doors, torn screens, dusty feeding conditions and improper cleaning of the udder before milking.
- 4. Other problems that may become evident while checking the appearance of the milk include frozen milk and partially churned milkfat. These problems, depending on their severity, may or may not be reasons for rejecting the milk. Slight churning or freezing may not call for rejection of the tank of milk but these conditions may affect the reliability of the milk sample and should be indicated on the sample container.

### Grading milk by temperature:

Part of the grading process is taking and recording the milk temperature. A temperature reading must be taken for each bulk tank picked up. This temperature shall be checked while the milk is being agitated and in motion. Proper agitation will be discussed later.

All bulk tanks are required to cool and maintain milk at 45°F or less within two (2) hours after milking. A blend temperature of 50°F is permitted up to four (4) hours after the commencement of milking or up to two (2) hours after the completion of milking. The law requires that the milk temperature for pickup be at 45°F or less. Note that many dairy plants require milk temperature at 40°F or less.

The hauler/sampler may use his/her thermometer to check milk temperature. A metal stem dial or electronic thermometer with external adjustment for calibration is recommended. The hauler/sampler's thermometer must be certified for accuracy a minimum of every six (6) months; accuracy  $\pm 2^{\circ}F$  (1°C), with proof of calibration. This thermometer must be accurate in a range of 32°F to 45°F and must be properly sanitized for one (1) minute in a sanitizing solution of 200-ppm chlorine or equivalent before placing it into milk.

### SAMPLING THE MILK

Law requires that every bulk tank of milk picked up for sale must be sampled by a licensed milk hauler/sampler. Required tests are performed on these samples for bacteria, somatic cells, antibiotics, butterfat, chemical and pesticide residues. The dairy industry is also using these samples in quality incentive programs and component pricing programs. Accurate laboratory tests are mandatory to ensure the purity and quality of the bulk milk and to ensure economic fairness to producers and processors

# Sample Collection (with dipper)

Sampling is the first step in the laboratory testing process. Accurate laboratory results cannot be achieved from samples which have been improperly taken, contaminated in any way or abused in storage or transport. To be satisfactory, the sample must represent all milk in the bulk tank and must be properly collected and transported. The following procedure must be strictly followed:

- The proper agitation time can be determined from the tank identification tag fastened
  to the tank, or by taking a series of samples to be tested for butterfat. If the producer is
  milking when the hauler/sampler arrives, the agitation time begins after the milk line
  from the parlor to the bulk tank is disconnected. The milk must be agitated a sufficient
  time to obtain a homogeneous blend.
- 2. When a slight amount of freezing or churning is noted, the sample may be taken but must not contain particles of ice or butterfat as it may adversely affect the sample results. This condition must be noted on the sample container and the milk producer must be notified for immediate correction.
- 3. A sample must be taken before any milk is removed from the bulk tank.
- 4. The hauler/sampler must take the sample with clean, dry hands.
- 5. The sample container must be identified with:
  - a. Producer number
  - b. Date of sample
  - c. Route number
  - d. Temperature of milk in the tank
- 6. A duplicate sample, the temperature control sample or TC, must be taken at the first stop of each load. This sample must be marked with:
  - a. The letters TC to indicate this sample is a temperature control sample
  - b. Date of sample
  - c. Time of sampling
  - d. Temperature of the milk in the tank
  - e. Producer number
  - f. Hauler/sampler permit number

- 7. The sample dipper must be sanitized using a sanitizing solution of 200 ppm chlorine or equivalent. The dipper is required to be sanitized from the bottom of the dipper to a point 6-8 inches up the dipper handle with a minimum of one (1) minute contact time. The sampling instrument shall be aseptically handled throughout the sampling process.
- 8. Sampling is done in the following manner:
  - a. Inspect dipper or sampling device to ensure it is clean, empty and of proper construction and sanitary design.
  - b. Rinse all sanitizer from the dipper by inserting the dipper into the milk at least two (2) times to a depth of 6-8 inches. Be careful not to put hands into the milk.
  - c. A sample is taken by inserting the dipper 6-8 inches into the milk, removing the dipper from the milk and pouring the milk into the sample container away from the bulk tank opening. The sample container must not be more than 3/4 full to allow an air space for proper agitation at the laboratory. Sample containers must always be protected. Containers must not be carried in clothing pockets and must not be dipped into the milk. Care must always be taken when opening sample containers to prevent contamination of the interior and/or cap of the container by touching with hands or any potentially contaminated object.
  - d. The sample container must be securely closed to prevent leaking and avoid contamination. When using whirl-pak bags, care must be taken to prevent sharp corners of the metal closer tab from puncturing the sample bag when folding to seal. Samples are filled no more than 3/4 full with an air space above milk to accommodate proper agitation at the laboratory.
  - e. Samples are immediately placed in a refrigerated sample case, which must cool and maintain samples at 32°F to 40°F. Samples must be supported in a rack or a floating sample support, which will keep the sample upright with the seal or cap above the refrigerant water. Refrigerant water level must be maintained near the upper milk level in the sample containers.
  - f. The sample dipper is rinsed in clear tap water before returning to storage area.
  - g. If a producer has more than one bulk tank with milk to be picked up, each tank must be individually sampled.

## Sample Collection (using a sample-cock on silos)

Some bulk tanks require the milk sample to be taken from a sample-cock. For this type of sample, the sanitation procedures would be the same as with any other bulk tank, including the prevention of contamination of milk contact surfaces and the washing of hands prior to sampling. Also, the requirements for thermometers, sample containers, and sample storage cases are the same.

To properly sample from this type of tank, the following steps must be followed:

- 1. The sample-cock is required to first be sanitized using a sanitizing solution of 200 ppm chlorine or equivalent. The milk sampler shall prepare the proper strength sanitizer and place it in a plastic container such as an 18-ounce whirl-pak bag.
- 2. Place the sanitizer container over the entire exterior of the sample-cock making sure that the opening to release the product is covered. Hold the bag tightly around the entire sample-cock and gently massage the sanitizer container for one (1) minute, forcing the sanitizer up into the sample-cock opening.
- 3. Purge the sample-cock by collecting at least two liters (approximately ½ gallon) of milk into a container.

These two liters (approximately ½ gallon) can be used to take the temperature of the milk in the tank. The remainder of the two liters of milk should be discarded. When obtaining the sample, care must be taken to avoid contamination from over-head condensation or from the hands pushing against the tension of the sample-cock springs. The flow of the product shall be started before the sample container is placed under the sample-cock and continue until the container is removed.

In many instances, this type of tank cannot be easily observed or checked for odor prior to sampling due to inaccessibility to the manhole or other openings while milk is in the tank. After the milk has been pumped onto the tanker, the manhole must be opened and the inside of the storage tank checked for any odors and other abnormalities. If there is a problem with the milk, the proper industry official should be notified prior to unloading the milk.

The overall cleanliness and cleaning of the sample-cock is the responsibility of the owner of the dairy farm. The hauler/sampler is responsible for properly sanitizing the sample-cock and correctly obtaining the milk sample.

### **MEASURING THE MILK**

Measuring the milk in the bulk tank is done by reading the level of milk in the tank indicated on a calibrated measuring stick. Each graduation on the measuring stick or sight tube is equivalent to a determined number of pounds of milk posted on a conversion chart specifically calibrated for each bulk tank. The bulk tank, measuring stick or sight tube and conversion chart must have coordinated calibration.

All tanks must be calibrated to assure the accuracy of the measuring stick or sight tube readings and chart conversions

### Procedures for measuring milk with a measuring stick

- 1. The milk must be completely quiescent (motionless) when a measurement is made.
  - a. If /when entering the milkhouse and the bulk tank agitator is running, it may be advantageous to sample the milk after the proper agitation time and before measuring.
  - b. If /when entering the milkhouse and the agitator **is not** running, it may be advantageous to measure the milk first. The bulk tank agitator must be switched off to assure it does not start whenever measuring the milk.

After any agitation, the hauler/sampler must wait for the milk to become completely quiescent (motionless) before making the measurement. It must also be noted that after the completion of milking, it may take several minutes for incorporated air to escape to get an accurate measurement.

- The measuring stick must be properly prepared to get an accurate measurement. The following steps are essential to ensure accurate measurement of milk in the bulk tank using a measuring stick:
  - a. Hands must be washed and dry before measuring milk.
  - b. Remove the measuring stick from its bracket.
  - c. Vigorously wipe the stick with a clean, dry, single service paper towel. The measuring stick must be clean, dry and free of fat to get an accurate reading.
  - d. The clean, dry stick is now ready to be placed back into its bracket. Slowly lower the stick until it is flush in the bracket seat.
  - e. Remove the stick from the bracket and read at once. The markings must be read at eye level in a well-lighted area.
  - f. Repeat steps c, d, and e to obtain a second measurement to ensure accuracy.

- 2. When the milk line is between measuring stick lines, read it to the closest measuring stick line unless the milk line falls exactly between two measuring stick lines, then read the milk line to the nearest **even** measuring stick line. It is important to always read the stick in this manner to get accurate results.
- 3. Record the reading of the measuring stick on the milk ticket immediately.

# Procedures for measuring milk with an external sight tube

- 1. Upon arrival, any milk already in the sight tube must be purged. Do not use milk for measurement that may have been left in the sight tube by the producer; it may be warm and give an inaccurate reading.
- 2. The following steps are essential to ensure accurate measurement of milk in the bulk tank using an external sight tube:
  - a. Connect the sight tube jumper hose to the outlet valve.
  - b. Open the valve slowly, allowing the milk to rise in the sight tube.
  - c. After giving time to settle any fluctuations of the milk in the sight tube, slide the milk level indicator to the line separating the milk and any foam/bubbles.
  - d. Read the milk level off the adjoining measuring scale.
  - e. Discard all milk that has entered the sight tube, following its measurement.
  - f. Record the reading of the measuring stick on the milk ticket immediately.

### TRANSFERRING MILK

Only after grading, checking temperature, sampling and measuring the milk in the farm bulk tank and completing the required paperwork is the hauler/sampler ready to start transferring milk. The milk transfer hose must go through the hose port. Note the following requirements:

- 1. The transfer hose must be capped and protected from contamination (Keep it off the floor).
- 2. The bulk milk tank outlet is washed and sanitized before attaching transfer hose.
- 3. The bulk milk tank manhole is lowered when pumping, while still allowing for air to enter as the milk is removed.
- 4. The agitator is operated when pumping the tank to minimize fat build up on sides of the tank. Shut off the agitator when tank is half-empty to minimize splashing.
- 5. When tank is empty, close valve on milk tanker, shut off the pump, disconnect and cap transfer hose. Avoid drawing excessive air into the transport truck tank.
- 6. Shut off the milk refrigeration system to the bulk tank when tank is empty.
- 7. Disconnect transfer hose/piping from bulk tank. Rinse the interior of the bulk tank with warm water (about 100°F). Also rinse transfer hose and other piping used for transfer.
- 8. Visually check the bottom of the tank for sediment before, during and after rinsing. Check the interior top and sides for staining or soil build up. Note also any foul or unusual odors. When a problem is observed, notify the milk producer and fieldperson.
- 9. Rinse the milkhouse floor free of milk. Acids developing from milk will erode concrete floors.

### TANKER WASHING RESPONSIBILITIES

When the hauler/sampler delivers the tanker of milk to a milk plant, the hauler/sampler and milk plant have a shared responsibility that the tanker and all appurtenances are cleaned and sanitized properly. Generally, the milk hauler/sampler is responsible for cleaning and sanitizing the sample storage compartment, the milk hose/milk pump compartment, the milk pump, outlet valve, milk tank transfer hose, connecting jumper hoses, caps, plugs and any other fittings in the compartment. Many of these parts will need to be broken down to clean and sanitize adequately. The cleaning of the filter in the dome is the hauler/samplers responsibility. Due to liability, some milk plants clean this lid assembly. It is important that the hauler/sampler and the milk plant receiver determine whose responsibility it is to clean these parts. Generally, the milk plant has the responsibility to clean the dust cover, dome lid, manhole gasket, and the inside of the milk tanker.

There are some exceptions to the above responsibilities. It is allowable to pickup multiple loads continuously within a twenty-four (24) hour period, provided the milk tank truck is washed after each day's use. The other exception is if the tanker of milk is dropped off at the milk plant and a cleaned tanker is picked up by the hauler/sampler. In this case, it is the milk hauler/samplers responsibility to assure that the milk tank truck and parts such as the pumps, hoses, caps, and other accessories are cleaned and protected.

In summary, it is important that each time the milk tanker is washed; all milk contact surfaces and compartments are cleaned and sanitized before reuse.

# **CONCLUSION**

The hauler/sampler is completely responsible for the collected sample(s) from the moment the milk sample is taken until it is in the possession of the analyst at the laboratory. The sampler must handle the sample so as to maintain the sample's integrity and to ensure that the sample is stored at the correct temperature. The test of any milk sample is only as accurate as the sample delivered to the laboratory. This fact makes the collection, handling, and transportation of samples the most important step in the milk sanitation program and the laboratory control program. Following standard sampling procedures can eliminate contaminated samples and can provide the milk producer, processor, and regulatory agencies with valid laboratory results.



Division of Environmental Health and Sustainability 4300 Cherry Creek Drive South Denver, CO 80246-1530 Telephone: (303) 692-3645

# **BULK MILK** HAULER/SAMPLER

HAULER /SAMPLER PERMIT #

MILK TANK TRUCK # Colorado Department **EVALUATION REPORT** HAULER/SAMPLER: TRANSPORTATION CO: INSPECTION LOCATION: INSPECTOR ID TRAVEL TIME INSPECT TIME INSPECTION TYPE An evaluation of your sampling procedures showed violations existing in the Items checked below. You are further notified that this evaluation report serves as notification of the intent to suspend your permit if the violations noted are not in compliance at the time of the next inspection. (Refer to Sections 3 and 5 of the Grade "A" Pasteurized Milk Ordinance.) HAULER SANITATION PROCEDURES Test thermometer sanitized (1 min. contact time) ...... Pickup practices conducted to preclude contamination of milk Non-acceptable milk rejected ...... 1. contact surfaces ..... Dry measuring stick with single-service paper towel ...... Measure milk only when quiescent..... Hands clean and dry, no infections ...... Do not contaminate milk during the measuring process..... Clean outer clothing, no use of tobacco...... Hose port used, tank lids closed during completion of pickup ...... Agitate milk before sampling at least 5 min. or longer as may be j. required by tank specifications..... Hose properly capped between milk pickup operations, hose cap protected during milk pickup ..... Do not open bulk tank valve until milk is measured and sampled ...... k. Hose disconnected before tank rinsed..... Temperature of milk, time, date of pickup and bulk milk hauler/sampler Observations made for sediment/abnormalities..... name and license or permit no. recorded on each farm weight Sample collected from each producer's bulk tank picked up...... ticket..... Tank thermometer accuracy **BULK TANK SAMPLING PROCEDURES** Tank thermometer accuracy checked monthly and recorded Thermometer – Approved Type..... when used as test thermometer..... a. Accuracy – Checked against standard thermometer every 6 Accuracy of required recording thermometer checked monthly months – accuracy (+) (-) 1 division ...... against standardized thermometer and recorded ...... b. Date checked and checker's initials attached to case ....... Temperature control sample provided at first sampling location for each rack of samples ...... 10. Sample Transfer Instrument Temperature control sample properly labeled with time, date, 0. a. Clean, sanitized or sterilized and of proper construction and repair ... temperature, producer ID and bulk milk hauler/sampler b. Sterile needle for aseptically dispensing a milk sample from identification ...... the bulk tank sample septum into a sample container (i.e., vial) Sample containers legibly identified at collection points..... c. Or an approved in-line sampler..... Sample dipper rinsed at least two times in the milk before q. d. Or a sanitized sampling cock ...... transferring sample..... Dipper should be extended 6-8 inches into the milk to obtain 11. Sampling Instrument Container representative sample..... a. Proper design, construction and repair for storing sample Sample cock properly sanitized and flushed prior to sampling...... dipper in sanitizer..... Septum surface properly sanitized and single service sterile needle b. Applicable test kit for checking strength of sanitizer (200 ppm used...... chlorine or equivalent) Do not hold sample container over the milk when transferring sample into the container ...... 12. Sample Containers Fill sample container no more than ¾ full...... a. Clean, properly sanitized or sterilized ...... Rinse sample dipper in safe tap water, return to storage container, W b. Adequate supply, properly stored or handled ...... open tank valve, start milk transfer pump ...... Immediately place milk sample in the sample case..... 13. Sample Storage Case a. Rigid construction, suitable design to maintain samples at 15. Sample Collection - Storage and Transportation 0°C - 4.4°C (32°F - 40°F), protected from contamination ....... Sample storage - refrigerant maintained no higher than milk level b. Ample space for refrigerant, racks provided as necessary .................... in sample containers – maintain sample temperature 0°C – 4.4°C (32°F- 40°F), do not bury tops of containers in ice, protect from 14. Sample Collection - Precautions and Procedures contamination..... a. Sampling instrument and container(s) properly carried into and Deliver samples to laboratory promptly ..... aseptically handled in milkhouse..... Samples and sample data – submitted to laboratory – if by b. Bulk tank milk outlet valve sanitized before connecting transfer hose ... common carrier, use tamper proof shipping case with top labeled c. Smell milk through tank port hole..... "This Side Up" d. Observe milk in a guiescent state with lid wide open and lights on when necessary.....

ENVIRONMENTAL HEALTH SPECIALIST DATE